Improving Staff Education and Application of Knowledge Regarding COVID-19 Transmission Prevention in Long-Term Care Facilities in North Carolina: A Collaborative Effort

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Abstract

Long-term care facilities (LTCF) residents and staff were disproportionately affected by the COVD-19 pandemic. This DNP project was a quality improvement undertaking that sought to increase the strike team's proficiency in donning and doffing procedures, who would train the LTC facility staff on the CDC-approved donning and doffing procedures. Education included proper PPE donning and doffing, infection control practices like sanitizing surfaces, acquiring additional PPE, and mandatory reporting of COVID-19 positive cases and deaths. The training included a PowerPoint presentation followed by a virtual return demonstration session with the DNP Student Project Team and a Qualtrics survey. The project team implemented the interventions virtually due to the nationwide lockdown. There was a 90% completion rate, with 82% of the respondents feeling confident with using PPE correctly after the training. 73% of respondents thought they had enough PPE supplies, and 82% thought they had enough time to use PPE correctly. Challenges included rapidly changing knowledge regarding the disease and management, limited and variable data to measure the project's effectiveness, communication delays due to lack of direct contact with the project partner. Any studies in the future may need to refer to the most up-to-date data and establish better communications avenues with the project partner.

Keywords: coronavirus 2019 COVID-19, long-term care facility, pandemic, PPE donning and doffing, Strike Team

Table of Contents

Improving Staff Education and Application of Knowledge Regarding COVID-19 Transmission Prevention in Long-Term Care Facilities in North Carolina: A Collaborative Effort.

Section 1. The Problem

Background

In December 2019, a pneumonia-like infection was reported from Wuhan, China. The infection is an acute respiratory disease caused by a novel coronavirus, SARS-Cov-2, and the other names include 2019-nCoV or coronavirus 2019 (COVID-19) (Guo et al., 2020; Holshue et al., 2020; Lu, 2020). The first confirmed case in the United States occurred in January 2020 (Holshue et al., 2020). After six months, over eight million people had contracted the infection, and about 220,000 people had died from the disease. The elderly who reside in long-term care facilities, i.e., skilled nursing homes and assisted living facilities, were affected the most (Chidambaram, 2020; Grabowski & Mor, 2020).

The Evidence

COVID-2019 is a type of virus that causes the severe acute respiratory syndrome. A bat has been proven to be the virus's host due to the genetic similarities in the other bat-hosted coronaviruses (Guo et al., 2020). Although available studies indicate the animals-to-humans transition, the virus can also be transmitted to uninfected people through respiratory droplets and contact from symptomatic or asymptomatic individuals (Awadasseid et al., 2020; Guo et al., 2020; Han &Yang, 2020; Paudel et al., 2020). The incubation period is between three to twenty-one days, within which the infected individual transmits the virus; however, vaccination might not confer immunity to the virus entirely due to possible mutations (Awadasseid et al., 2020).

By June 2020, the infection rate in long-term care facilities was 93.00 per 1,000 residents. In North Carolina alone, the infection rate was 72.60 per 1,000 nursing home residents (Center for Medicare and Medicaid Services [CMS], 2020). As of June, COVID-19-related deaths in nursing homes reached 25% of all COVID-19 deaths in the U.S. (Alonso-Zaldivar & Myers, 2020; Grabowski & Mor, 2020). As of May, 61% of COVID-19-related deaths in North Carolina occurred in the long-term care (LTC) facilities' residents (Nyamekye, 2020).

On June 25, 2020, the Centers for Disease Control and Prevention (CDC) issued an update for the guideline on COVID-19 management in long-term care facilities. The updates include (a)" tiered recommendations to address nursing homes in different phases of COVID-19 response," (b) "a recommendation to assign an individual to manage the facility's infection control program," (c) "guidance about new requirements for nursing homes to report to the National Healthcare Safety Network (NHSN)," and (d) "a recommendation to create a plan for testing residents and healthcare personnel for SARS-CoV-2" (Centers for Disease Control and Prevention [CDC], 2020a). CDC required LTC facilities to establish an initial testing plan for both symptomatic and asymptomatic residents and healthcare workers, followed by re-testing of each resident to ensure the absence of an outbreak. CDC also required continued testing every three to seven days for 14 days since the last positive case (CDC, 2020b).

In addition to the CDC's recommendations, the North Carolina Department of Health and Human Services (NCDHHS) required every healthcare facility to develop an emergency preparedness plan that should be reviewed and updated annually (CMS, n.d.). Section E-0035 of the State Operations Manual Appendix Z outlines training requirements and testing of the emergency preparedness plan in the LTC facilities. "The documentation of the training with evidence of demonstrated staff knowledge of emergency preparedness should be shared with the

local Department of Health and Human Services" (CMS, n.d., p. 50). Failure to meet the requirements resulted in fees and penalties.

Problem Statement

The COVID-19-induced deaths (61%) among the North Carolina nursing home residents were a disaster that, if not addressed, would sweep the entire nursing home population. Data analysis showed that the already immune-compromised and continuously dwelling residents of the LTC facilities were significantly affected due to the understaffing crisis and the compromised infection control measures (Chidambaram, 2020). This situation was described as "a lethal mix of a highly contagious virus, older vulnerable residents who usually require intimate care, deficiencies in infection control practices, and dire PPE shortages and testing" (Abbasi, 2020, p. 123). Urgent and revolutionary measures were imperative. The federal and state governments compiled the emergency preparedness policies and procedures geared to mitigate such a disaster. However, the pandemic's impact demonstrated a strong need for strategic changes, such as the enduring practice implementation in nursing homes instead of annual historical training and reviews.

Purpose Statement

The purpose of this Doctor of Nursing Practice (DNP) project was to partner with the North Carolina Department of Health and Human Services in formulating a strategy to curb the COVID-19 spread and mortality rates in North Carolina LTC facilities. The design would use a different approach to enhance surveillance and infection control training. This strategy would involve all personnel and residents of the LTC facilities. This project sought to increase the knowledge of proper donning and doffing of PPE among North Carolina long-term care facilities employees. The increased knowledge would reduce viral transmission: staff-to-staff, staff-to-

patients, resident-to-resident, and among staff, residents, vendors, and visitors. The project also sought to indirectly increase staff retention by empowering them through improved knowledge and application of knowledge.

SECTION II. The Action

Interventions

With the alarming national COVID-19 statistics, CMS (2020) composed a toolkit to guide all states to curb the COVID-19 progression in the LTC facilities. It explained the infection control measures, procedures, and actions for staff, nursing home residents, and visitors. North Carolina was implementing these recommendations in every facility. Furthermore, the North Carolina Department of Health and Human Services (NCDHHS) designed its toolkit "COVID-19 Long-Term Care Infection Control Assessment and Response (ICAR) Tool." This tool was meant for LTC facilities to impede COVID-19 occurrence and facilitate early identification of infections, prevention, and severe illness management. It would also ensure adequate personal protective equipment (PPE) supply and optimization (CMS, 2020).

NCDHHS adopted point-prevalence surveys (PPS), i.e., a CDC guidance for testing and tracking the infection prevalence in LTC facilities (CMS, 2020). PPS identified the testing specifics, such as testing priorities, testing process (including repeated testing), who would do the testing, who would pay for it, test results handling and dealing with individuals who refuse to test. The guidance also clarifies the steps for discontinuing isolation.

The Statewide Program for Infection Control and Epidemiology (SPICE) is a state-sponsored program that prepares infection control and prevention personnel to prevent healthcare-associated infections (HAIs) in healthcare facilities (NCDHHS, 2019). Although NCDHHS has recommended infection preventionists (I.P.s) through SPICE, most North Carolinian nursing homes do not have I.P.s. Therefore, NCDHHS developed a toolkit, *"Long-Term Care Infection Prevention worksheet,"* to ensure I.P.s' responsibilities assignment and completion. The other NCDHHS-approved toolkits for LTC facilities included:

1. What to Expect: Response to COVID-19 Cases in Long-Term Care Settings,

2. LTC Infection Control Assessment Tool,
3. LTC Infection Prevention Education Resources,
4. LTC Optimize PPE Supply-Gowns, and
5. LTC Optimize PPE Supply-Facemask

(North Carolina Department of Health & Human Services COVID-19 [NCDHHS COVID-19], n.d.a).

The project partner planned a statewide education project for all LTC facility personnel to educate staff about proper infection control measures, including donning PPE. The project partner would collaborate with other healthcare coalitions in North Carolina and the ECU's doctoral students. "The project partner would hire about 2400 healthcare professionals and paraprofessionals for this larger COVID Outbreak Prevention and Response Project. This project was to last six to twelve months. The team would be trained to support healthcare facilities in North Carolina" (DHHS LTC COVID-19 Project, 2020).

Ethical Considerations &Protection of Human Subjects

In preparation for the formal approval process, the team reviewed several Collaborative IRB Training Initiative (CITI) modules. The team did not need an IRB because the project met the Code of Federal Regulations qualifications: (a) the project would not involve the residents who would be considered a vulnerable population, (b) the project would pose minimal harm (if any) to the participants as the process would use virtual and face to face training, and (c) no personal identifying information would be carried out of the sites, and the information will not cause the participants any risk of criminal and civil liability (DHHS LTC COVID-19 Project, 2020). The team also took a self-certification survey sent to East Carolina University (ECU) to

determine the need for an IRB. After a review of the self-certification, it was decided that an IRB was not required.

Although the project team was collaborating with the project partner, the project team did not receive any federal funds, and the project would still occur even if the project team may not benefit from it. Further still, the project was not a multisite project or a systematic investigation designed to contribute to generalizable knowledge. However, the project findings may likely be published, presented, or disseminated outside of ECU.

The project partner contracted with LTC facilities to obtain strike teams' permission for entrance. The project partner did not require the strike team members' consent because the team applied for the paid positions and agreed to the job description. LTC facilities are federally-, state-, and privately funded, which might impede project implementation in privately-funded LTC facilities because the project is state-initiated. Private corporations might consider it as interference in their autonomy and thus, refuse project participation.

The project team was careful about sending the strike team to facilities with already established infection prevention personnel would duplicate resources, which is cost-inefficient. The process could interfere with daily routines and normal operations in facilities that use the CDC guidance toolkit and have I.P.s. The Strike Teams' introduction would expose facilities to the risk of HIPAA violations by compromising the security of residents' and staff's personal information.

During the needs assessment, the team needed to obtain the baseline statistics showing the staff retention and infection rates from every participating LTC facility. However, this information was considered private, and a breach of the contract was initially signed to conceal

the participating LTC facilities' identity. The team requested the project partner to de-identify the data before providing it to the team.

Section III. The Project Design

The project site will be the Medicare/Medicaid-funded LTC facilities in North Carolina. FOR Long Term Care ("Types of long-term care," n.d.) identifies several categories of LTC facilities based on the level of care, the number of occupants, and care duration. The first category is the assisted living facilities, which comprises of:

1. Adult care homes which house more than seven residents provide 24-hour supervision and assistance with personal needs, and they may house residents with Alzheimer's disease.
2. Family care homes which house two to six residents providing 24-hour supervision or assistance with personal care needs.
3. Multi-unit assisted housing for several residents who live in their apartments and do not need 24-hour supervision or assistance with personal needs. If more care is needed, they may arrange it through private agencies. These facilities are unlicensed.

The second category of LTC facilities is skilled nursing or nursing homes. Nursing homes are meant for individuals who need 24-hour skilled nursing care and other medical services, including physical therapy, occupational therapy, speech therapy, dental, podiatry, and optometry. These facilities also provide transportation for medical appointments.

The third category is the continued care retirement communities. An individual's community of care is determined by the level of care the individual needs. The residents change the community as the level of care changes. Home- and community-based service is another form of long-term service provided to individuals in their homes. This type of care offers personal care services, transportation, meal services, adult daycare, and respite care. This project focuses on skilled nursing homes. "Nursing homes are licensed and regulated by the State Division of Health Service Regulation Nursing Home Licensure and Certification Section with

other programs, all of which work under the North Carolina Division of Aging" ("NC DHSR," n.d.).

While Medicaid is the primary payer for skilled nursing facility services, Medicare pays for limited short-term skilled nursing home services. Individuals whose income and resources do not exceed $2,000 (excluding some assets, like the home) may qualify for Medicaid. The Aid and Attendance benefit (also known as the improved pension program) is meant for financially needy veterans, although it is not as limited as Medicaid. The veterans who do not qualify for the Aid and Attendance benefit may get services from the veterans' affairs nursing homes. One can only be eligible for this service if they are considered 70% disabled. Other payment options for nursing home care include reverse mortgage, long-term care insurance, and nursing home tax deductions ("How to Pay," 2019).

Describe the Project Team

The project team consisted of a site champion who was a representative of the project partner. A faculty member carried out the duties of the site champion. The team also consisted of three other members from the project partner, two members from East Carolina University faculty, and five East Carolina University (ECU) DNP project students. The ECU students would educate and prepare the strike team members. The strike team members included certified nursing assistants (CNAs), medication aides (Med Techs), licensed practical nurses (LPNs), registered nurses (RNs), emergency medical technicians (EMTs), advanced emergency medical technicians (AEMTs), advanced practice registered nurses (APRNs), and other nursing home personnel.

The Project Participants

LTC facilities' employees fall into either the direct care category or the indirect care category. The comparison of the staffing characteristics of staff in the Green House nursing homes and conventional nursing homes showed that the nursing home employees' average age ranges from 37 to 46 years (Brown et al., 2016). The average retention rate of the staff was four years. The nursing home staff consists of direct care staff who include RNs, LPNs, and CNAs. The other personnel is the administrative and support staff, who include the custodians, maintenance, and groundskeepers (Marak, n.d.). The project participants had varied characteristics with ages ranging from 18 years and older and years of experience ranging from 5-10 years. 46% of the participants were Emergency Medical Technician (EMTs), 18% were paramedics, 18% were registered nurses, 9% were LPNs, and another 9% were an unidentified specialty. The education level of the participants varied, with 9% having some college education, 9% had some technical degree, 36% participants had an associate degree, 18% had a bachelor's degree, while 27% had a graduate degree.

Project Goals and Outcome Measures

The purpose of the proposed Doctor of Nursing Practice (DNP) project was to formulate strategies for expanding the knowledge of proper infection control protocols in LTC facilities. This project sought to increase the knowledge of proper donning and doffing of PPE among North Carolina long-term care facilities employees.

Description of the Methods and Measurement.

Figure 2 in Appendix A shows the processes and drivers of the project. The project team would prepare the PowerPoint education modules with embedded videos sent to the Strike Team members. The Strike Team members would watch the videos, enroll, and schedule a skill check-

off through a doodle poll created by the project team. The enrolled Strike Team member would then receive a Webex invitation from the project team. The project team member met virtually with the enrolled Strike Team members for a skills check-off, following the step-by-step instructions provided in the material. After the completion, the project team sent certificates of completion to the participants, who, in turn, completed a Qualtrics survey. After the completion of the skills check-off, the project team communicated with the project partner. The successful Strike Team members would be assigned to the different LTC facilities as educators and supplementary staff during staffing shortages. The project partner provided the PPE for demonstration and usage in LTC facilities.

Implementation Tools. In implementing this project, the team used the "Chain of Infection" theoretical framework. The team planned to check the enrollment of participants through the doodle poll every day. Immediately after a participant enrolled, the team would send a Webex invitation for the skills check-off. The team met alone as needed, with faculty weekly, and with the site champion every two weeks. When the Strike Team member demonstrated the skills correctly, that was considered a success. If Strike Members missed steps, the project team member corrected the skipped steps, and then they would repeat the process. The Strike Team does not get a certificate of completion without completing the donning and doffing procedures.

Process Measures. The project team trained the Strike Team members, who would teach the LTC facilities staff. The team would reinforce the CDC infection prevention protocols through virtual training with check-offs. The Strike Team members were to watch a PowerPoint presentation on how to don and doff PPE, after which they would back-demonstrate the learned skills. The DNP team evaluated the Strike Team members' performance against the skills check-

off list. The ECU DNP project team provided feedback to the Strike Team on the back demonstration.

Outcomes Measures. The project sought to evaluate LTC providers' knowledge and skills on donning and doffing of PPE. The project team obtained completed check-off lists, which they checked off as the participants performed the video skills. An analysis of the performance in the skills check-off was performed and tabulated. The participants also filled a Qualitrics survey, which provided feedback to the DNP team.

Methods and Measurement.

The project was guided by the project's primary and secondary drivers. Figure 2 in Appendix A shows the primary drivers and the processes for implementing and assessing the project processes. Figure 3 in Appendix A shows a SWOT analysis of the project.

Implementation Plan. The project partner conducted statewide recruitment of Strike Team members. At the same time, the ECU DNP project team developed a PowerPoint presentation with embedded videos covering the CDC procedures on donning and doffing PPE. The team then sent the PowerPoint to the project partner designees, disseminating the resources to the Strike Team members. After watching the PowerPoint videos, the Strike Team members scheduled themselves through a doodle poll, after which they received a Webex invitation for the check-off session.

Timeline

The project started in May 2020 and was to end in July 2021, as shown in Figure 1 in Appendix A. The project started with problem identification, after which the project was created. The project team sought a partner, which accepted the partnership. In August 2020, the team and the faculty member completed the necessary legal paperwork for IRB following the Qualitrics

self-certification tool's completion. The site champion obtained the project letter of support, and the project team entered into a contract with the project partner. The project team completed the implementation tool and assessment tools. Part of the implementation started earlier, and it would run through November 2020. By January of 2021, the team would fully implement the project and begin the evaluation process. The implementation was to end in May 2021, and the evaluation would start. The team would design a dissemination tool and, by the end of July, and disseminate the findings.

Section IV. Results and Findings (Facts)

Results

This project aimed to increase the Strike Team members' donning and doffing skills competencies. While there were many initial candidates participants at the beginning of the project, due to the existing restrictions for social distancing from the pandemic and the project partner's goal changed, the project's scope had to be reduced. Only eleven Strike Team members participated in the project.

Based on these results, after implementing the project, a majority – 83% - of the 11 participants reported increased knowledge and confidence regarding donning and doffing of PPE. 73 % of the participants said they had enough PPE in their workplace, while 20% stated they did not have enough and had to reuse or work without PPE. A majority, 73%, of the participants indicated that they felt that they had enough time on their schedule to don and doff PPE properly. The other reasons for not using PPE or properly donning and doffing included the location of the PPE from the work site, witnessed improper donning and doffing by other staff, lack of enough time for donning, and doffing, and having a high staff to resident ratio.

Process Measure Data.

The project was conducted on an online medium. In collaboration with the NCDHHS, the project partner, we issued Qualtrics surveys to the participants who would work in long-term care facilities to examine their donning and doffing skills competency. To this end, the participants were to enroll online and demonstrate the skills virtually. Enrollment for the project was low with some no-shows and surmised that technology, existing social distancing restrictions, or irregular work schedules might have hindered participation in this project. In this project, the independent variable refers to participants' knowledge and confidence concerning

donning and doffing PPE. The dependent variable is the time taken to use the PPE properly. More participants may be examined over a longer time to have more significant data to make meaningful data analysis to improve the project.

While the project team waited for the project partner to direct the participants to enroll in the project, the project partner also engaged the same group by deploying them to the facilities in dire need of additional staff. The following factors may have played a role in the low enrolment. The project partner was paying the same participants to go work in the facilities. Since the project was not paying them, the money incentive might have influenced their enrollment. Third, the project partner held several meetings with the same group, which might have distracted our project.

Outcomes Measure Data.

An outcome measure of this project included a back demonstration of the skills check-off after watching the prerecorded narrated PowerPoint of the donning and doffing skills. At the end of the skills check-off, the participants took an anonymous Lickert scale Qualtrics survey. Through the survey, they rated their level of improvement after the demonstrations, the availability of PPE in their workplaces, their confidence in donning and doffing PPE correctly, how frequently they used PPE as required, and any additional comments wished to convey.

Discussion of the Major Findings

All 11 participants passed the skills check-off with 100%. The individuals offered some additional information on the possible factors which may diminish their ability to contain the COVID-19 pandemic in the LTC facilities under the anonymous voluntary comments. From the survey, 91% of the participants (10 out of 11) stated that the challenge was not their confidence in donning and doffing after the education session, but instead that the availability of PPE (73%)

was an issue that affected their ability to don and doff the PPE. Additionally, 73% of respondents reflected that the intensity of the work and the workload did not allow them time to follow the proper steps in donning and doffing. Some of the participants verbalized reusing PPE, while the others verbalized overwhelming workload due to staffing shortages. Although the number of the participants was small, we deduced that the spread of the pandemic might not have been directly related to low proficiency in donning and doffing. We realized that improper donning and doffing might have been due to time constraints and work demands, which may have been secondary to other factors like understaffing.

Section V. Interpretation and Implications

Cost-Benefit Analysis

Nguemeleu et al. (2020) conducted a systematic review of cost-benefit analyses (CBA) of infection prevention and control of Healthcare-Associated infections (HCAIs) from 2000 to 2019. They established that yearly net cost savings ranged from C$252,847 to C$1,691,823. These suggest that active prevention of COVID-19 benefits organizations and the public more than mitigating steps after an infection. More funds and resources ought to be channeled into ensuring proper and sufficient PPE are delivered.

Another CBA, by Rowthorn and Marcijowski (2020), looked at the impact of lockdown on the economy and mental health like depression and found that lockdown negatively affects the economy and reduces productivity. Two teams from Brookings et al. (2020) and Klein and Smith (2021) presented that COVID-19 disrupted the U.S. economy. The pandemic caused high unemployment rates and unemployment claims, small business revenue dropped, low-income families experienced economic shock, and most could not pay their rent or mortgage, and food insecurity increased. All the deadly COVID-19 pandemic consequences would have been avoided if the infection had been contained.

At the time of the project implementation, there was no data for SARS-CoV-2 transmission rates. Therefore, it was not possible to determine a direct association between education and decreased infection rates; however, by looking at the available data on the cost of burden of other HAIs, the benefit based on hospitalization and antiinfectives could be deduced. The U.S. Department of Health and Human Services estimated that the annual cost of HAIs in skilled nursing facilities ranges between 1.6 million to 3.8 million (Cohen et al., 2016). Based on

the data on other HAIs, it may be assumed that the project interventions would lower infection transmission rates. However, due to the lack of direct association between the return demonstrations and COVID-19 infection rates, the project team could not conduct a cost-benefit analysis.

Resource Management

The project partner incurred minimal expenses in terms of project resources. The project meetings were held during the usual staff meetings for other project partner duties. The project partner provided the PPE for donning and doffing demonstrations during the skills check-off. The DNP project student team created the skills check-off list and also paid for a subscription for the doodle poll. The students did not receive any assistance or funding from the project partner or any other organization.

Implications of the Findings

Although the participants were few, all 11 participants demonstrated competence in the doffing and doffing of PPE. The quantitative results of the Qualtrics survey showed that it was not the lack of knowledge or mastery of the skills but other factors that distracted the attention to proper donning and doffing. The participants endorsed confidence donning and doffing competence. However, they were unsure which guideline to follow on removing as they were not aware of the differences between the CDC recommendation and the IDSA guidelines.

Implications on the Patients.

Proper donning and doffing of PPE will improve patient quality of life and reduce morbidity and mortality. Healthcare-associated infections would reduce dramatically if all healthcare personnel followed the right techniques. Mastery of the skills will also save the patients millions of dollars in hospitalizations and lost workdays. Effective infection control practices can prevent the acquisition of resistant infections, patient deaths, or costly extended hospital stays.

Implications on the Nursing Practice.

Residents of LTC facilities are vulnerable to severe consequences of inadequate infection control protocols and practices. This quality improvement project showed that although the prevalence of HAIs is high in LTC facilities, they are not caused primarily by low donning and doffing competency levels. The results of this project indicate that other secondary factors need to be investigated, such as the availability of PPE. Organizations ought to ensure that any cost-saving measures they take do not harm the long-term benefit to patient and organizational outcomes. Indeed, COVID-19 infection affected everybody, including healthcare workers who have done donning and doffing for years, although they knew the infection's mode of transmission. The effect of COVID-19 on healthcare personnel confirms that it was not the lack of knowledge of donning and doffing PPE but other factors. Identifying barriers to proper donning and doffing of PPE may unveil the root cause of poor infection control in LTC facilities.

Impact on Healthcare System(s).

Preventing HCAIs has proven to be the most effective way to avoid unnecessary expenses from fines/penalties, loss of employee workdays, and other costs. *Vernacare* reports

that HCAIs can cost up to 1.2 billion per year ("Four reasons," n.d.). It further says that infection prevention is a sure ware to cut down this expense and, therefore, benefit the healthcare facility long term ("Four reasons," n.d.).

Sustainability

This project should be repeated with a larger sample, directly involving more LTC facility personnel to yield valuable information to help hospitals and healthcare organizations better manage any future epidemic or pandemic. This project ought to be repeated in the future to determine the cause of staffing shortages and the rampant spread of infectious diseases in long-term care facilities, and the barriers to proper donning and doffing. Further investigation into the barriers may also help uncover systemic weaknesses so that another epidemic does not lead to massive loss of life of the residents of LTC facilities in North Carolina.

Dissemination Plan

In disseminating the findings of this study, the results of the quality improvement project will be shared physically on East Carolina University campus before faculty and fellow students, on social media channels for nurses, on Facebook, and on Instagram to increase the awareness about the findings. I will also submit this work to The Scholarship, East Carolina University's online Repository, which will be available for the general public review. The project team will disseminate the findings of this project to the project partner and stakeholders.

Section VI. Conclusion

Limitations and Facilitators

The implementation process stopped immediately after the COVID-19 vaccine was approved because the project partner's focus shifted to availing the immunization to the long-term facilities residents and staff. There was no direct communication between the project partner and the project team. It took a long time for the project team to get feedback from the project partner. There were also limitations related to the participants. The project experienced a very low and delayed enrollment from the participants. The project partner engaged the same participants for paid positions in the same facilities and shifted the participants' focus. The original intention was for the participants to train the LTC facilities staff on the same skills, but it did not go as initially planned.

Recommendations for Others

The findings of this project are not generalizable given the small project sample size. Anyone searching for information on disease prevention may need to seek the most current knowledge and data on COVID-19 epidemiology, virulence, pathophysiology, effect on various populations, infection prevention, surveillance, and reporting procedures. Our findings should be considered supplemental. Future participants should reach out to the project team if they are not able to enroll. The participants may need to provide their contacts to the project team to ensure smooth communication if it does not interfere with the nature of the project.

Recommendations for the Further Study

This study should be repeated with a large sample size to ensure generalizability. When conducting the survey, ensure direct communication with the participants and the project partner. It will be a good idea to avail an incentive to encourage enrollment. Using the same design, the

project team will need to ensure that the enrollment process is streamlined. For those planning to repeat this study, it will be an excellent opportunity to determine the efficacy of return demonstrations in reducing self-contamination and transmission.

Although the COVID-19 was a disaster, it exposed a broken system that has had problems for years. The findings of this project showed that HAIs do not occur due to a lack of knowledge of donning and doffing PPE but because of other factors that affect the efficient use of PPE. Alleviating the factors that lead to a compromise in infection surveillance and disease prevention policies and guidelines will help ease the burden of HAIs in long-term care facilities. The federal and state agencies should ensure strict adherence to the policies and procedures. Without imposing strict rules in LTC facilities, similar future pandemics will follow the same trend and lead to similar results like this pandemic.

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Appendix A

Figure 1

The DNP Project Timeline

DNP I		DNP II		DNP III		DNP IV	
May 2020	*July 2020*	*August 2020*	*November 2020*	*January 2021*	*April 2021*	*May 2021*	*July 2021*
1. Problem identification 2. Literature review 3. Identification of need 4. Project meeting with faculty 5. Identifying project partner 6. Creation of project		1. One-pager summary of prospective project 2. Initial Qualtrics self-certification tool and IRB 3. Site champion resume 4. Project Letter of Support 5. Project contract 6. Evaluating the project feasibility and adjustment		1. Onboard the strike teams through the DHHS 2. Project Team meeting with faulty 3. Start actual implementation 4. Send the PowerPoint, doodle poll to strike teams 5. Evaluating the implementation process		1. Evaluating outcome measures 2. Analyzing the project data scores 3. Evaluate the impact of the project on the participants 4. Evaluating the effect of the project on the problem 5. Poster preparation for dissemination 6. Publication of findings	

Figure 2

Project Driver Diagram: Driver Diagram for the Project Drivers and Processes

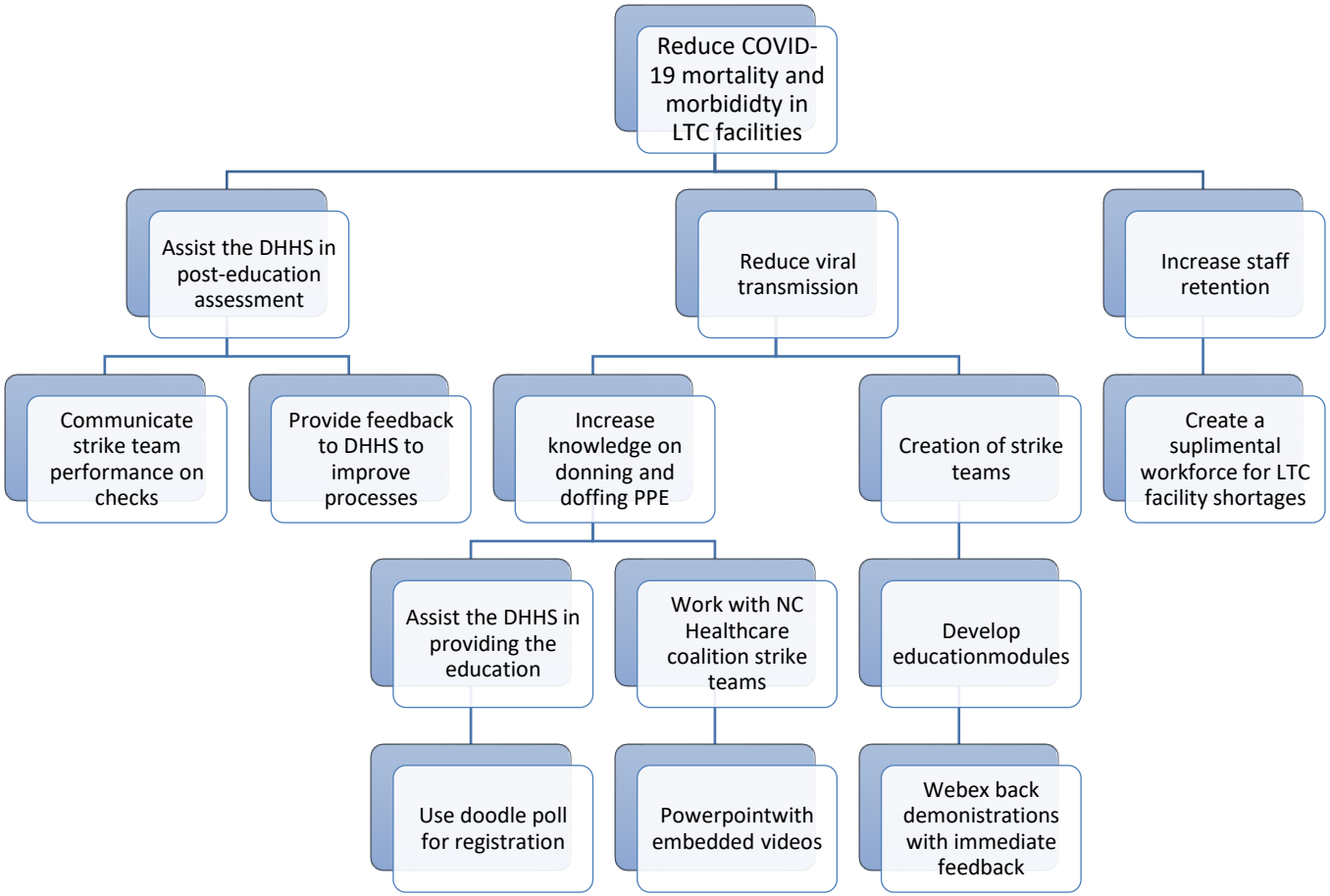
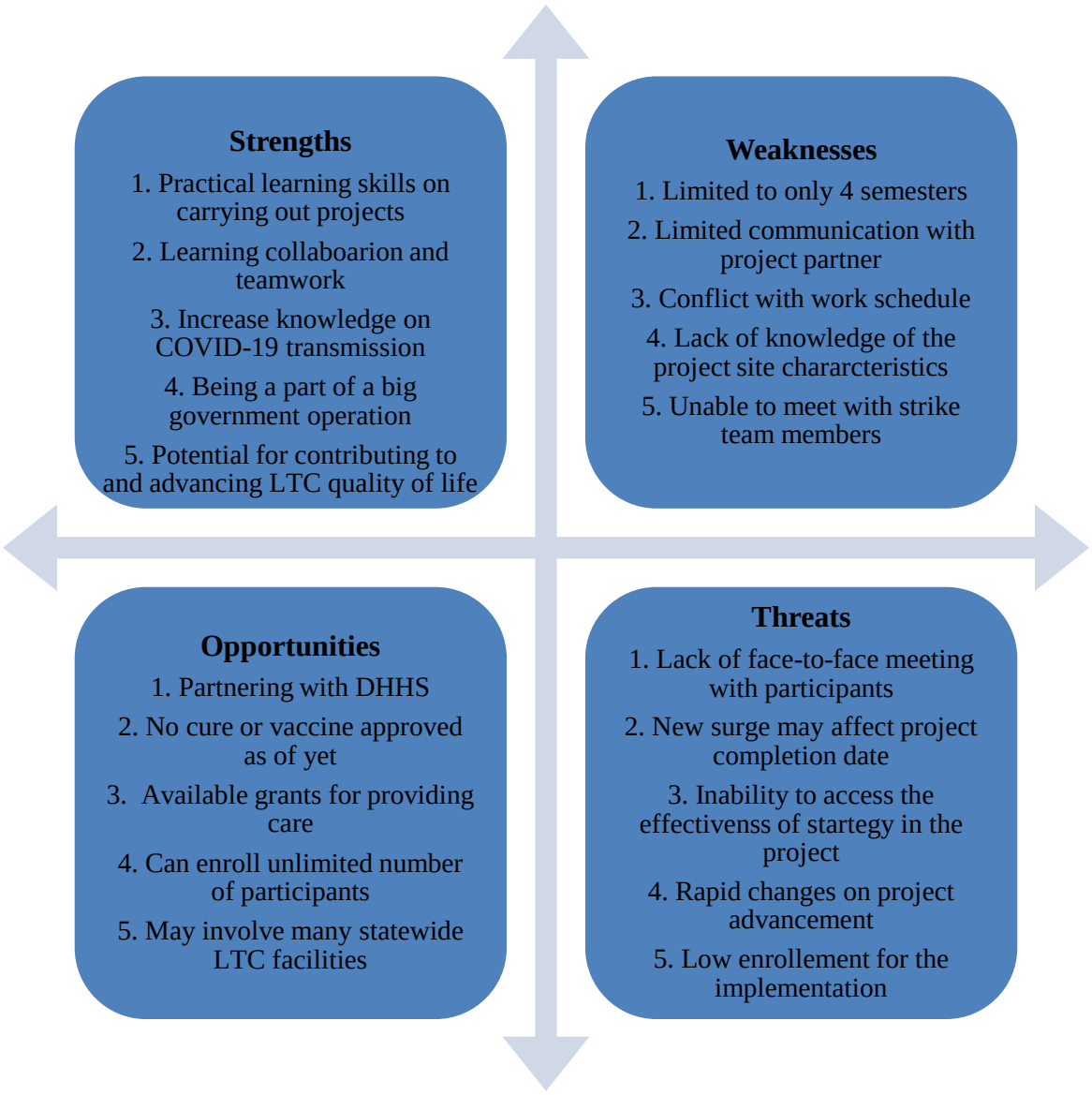


Figure 3

Project SWOT Analysis



Appendix B

Availability and Accessibility of Personal Protective Equipment (PPE)

Personal Protective Equipment (PPE) Competency

Validation Donning and Doffing Standard Precautions and Transmission Based Precautions

Type of validation: Return demonstration	☐ Orientation ☐ Annual ☐ Other

Employee Name: _____ **Job Title:** _____

Competent	Yes	No
Donning PPE:		
1. Perform Hand Hygiene		
2. Don Gown:		
• Fully covering the torso from neck to knees, arms to the end of wrists		
•Tie/fasten in back of neck and waist		
3. Don Mask/Respirator:		
• Secure ties/elastic bands at middle of head and neck		
• Fit flexible band to nose bridge		
• Fit snug to face and below chin (Fit-check respirator if applicable)		
4. Don Goggles or Face Shield:		
•Place over face and eyes; adjust to fit		
5. Don Gloves:		
• Extend to cover wrist of gown		
Doffing PPE:		
6. Remove Gloves:		
• Grasp outside of glove with opposite glove hand; peel off		
• Hold removed glove in gloved hand		
• Slide fingers of ungloved hand under remaining glove at wrist		
• Peel glove off over first glove		
•Discard gloves in the waste container		
7.Remove Gown:		

•Unfasten ties/fastener		
•Pull away from neck and shoulders, touching inside of gown only		
•Turn gown inside out		
•Fold or roll into a bundle and discard		
8. Exit Room		
9. Perform Hand Hygiene		
10. Remove Mask/Respirator (respirator removed after exit room/closed door		
• Grasp bottom, then top ties or elastics and remove		
• Discard in the waste container		
10. Perform Hand Hygiene		

Standard Precautions & Transmission Based Precautions	Yes	No
15. Staff correctly identifies the appropriate PPE for the following scenarios: (PPE to be worn based on the anticipated level of exposure) *		
• Contact/Contact Enteric Precautions (gown & gloves)		
• Droplet Precautions (surgical mask)		
• Airborne Precautions (fit-tested respirator if applicable)		

*NOTE: Examples include a mask for coughing/vomiting patient, goggles/face shield for irrigating draining

wound, gown for dressing change if scrubs may touch patient, etc.,

Comments or follow-up actions:

	/
Employee Signature Date	Validator Signature

https://www.cdc.gov/hai/edfs/ppe/ppe-sequence.pdf

Appendix C

Proposed Budget

Line Item	Unit Cost	Quantity	Total
Virtual PPE Check-off Return Demonstration Materials[1]			
• **Box of gloves (100-count)**	$25.00	15[2]	$375.00
• **N-95 mask (per mask)**	$2.00	15	$30.00
• **PPE Gown (pack of 10)**	$15.00	15	$225.00
• **Face shield (pack of 2)**	$7.00	15	$105.00
Total	**$49.00**		**$735.00**
COVID-19 Strike Team Member Training[3]			
• **Review of CMS module**	$33.15[4]	16	$530.40
• **1-hour return demonstration[5]**	$33.15	1	$33.15
• **1-hour CEU credit[6]**	$40.00	1	$40.00
• **PPE supplies[7]**	$49.00	1	$49.00
Total	**$155.30**		**$652.55**

Note: Proposed budget for training of Strike Team members.

[1] Cost of PPE check-off return demonstration materials, including a box of gloves, N-95 mask, PPE gown, and face shield based on most current Amazon.com prices (as of 4/7/2021).

[2] Quantity includes the ten full-time Strike Team members and the five DNP Project Student Team members.

[3] Cost of COVID-19 Strike Team member training is based on the training of one Strike Team member.

[4] Cost is based on the 2020 average salary of a Registered Nurse (U.S. Bureau of Labor Statistics, 2021)

Appendix D

Qualtrics Survey

ECU

Select the age range that best fits you.
- ○ 18 to 25 years old
- ○ 26 to 35 years old
- ○ 36 to 45 years old
- ○ 46 to 55 years old
- ○ 56 years old+
- ○ Prefer not to answer

What is your current professional role?
- ○ Administrative Staff (including Shift Supervisor, Nurse Manager, or Administrative Assistant)
- ○ Certified Nursing Assistant
- ○ EMT
- ○ Licensed Practical Nurse
- ○ Paramedic
- ○ Registered Nurse
- ○ Other

How long have you had your current licensure or certification?
- ○ 0 to 4 years
- ○ 5 to 9 years
- ○ 10 to 14 years
- ○ 15 to 19 years
- ○ 20 or more years

What is your highest level of education completed? Choose the option that best fits you.
- ○ GED
- ○ High School Diploma
- ○ Some College
- ○ Technical Degree or Certification
- ○ Associate's Degree
- ○ Bachelor's Degree
- ○ Graduate Degree

The virtual education I received improved my knowledge about putting on and taking off personal protective equipment (PPE)?
- ○ Strongly agree
- ○ Somewhat agree
- ○ Neither agree nor disagree
- ○ Somewhat disagree
- ○ Strongly disagree

On a scale of one to nine, after the inservice how confident are you that in putting on and taking off personal protective equipment (PPE)? (1- not confident and 9- very confident)

I have had plenty of personal protective equipment at the facilities where I have staffed.
- ○ Yes
- ○ Uncertain
- ○ No

I have always been able to locate personal protective equipment at the facilities where I have staffed.
- ○ Yes
- ○ Uncertain
- ○ No

I feel like I have time in my schedule to correctly use personal protective equipment.
- ○ Strongly agree
- ○ Somewhat agree
- ○ Neither agree nor disagree
- ○ Somewhat disagree
- ○ Strongly disagree

What other information would you like to share?

Appendix E

FORM 8274A

Project Implementation Worksheet & Tools

(this form should be completed while meeting with your site champion(s) on or after 1/19/2021 & should contain specific detailed information)

Student's Name: Roselyne Onkundi

Project Site Champion: Dr. Janet Tillman

Project Name: Improving Staff Education and Application of Knowledge Regarding COVID-19 Transmission in Long-Term Care Facilities in North Carolina

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What data will you be collecting? Descriptive statistics from the PPE donning and doffing proficiency of Strike Team members.

Where will you get the data? After watching CDC videos on donning and doffing PPE by strike team members, skills check-off on return demonstration.

How often will you be at the project site? I will not be at the project site but will be meeting with the Strike Team members virtually.

How often will you meet with your site champion? At least every two weeks

What tools will you use to track implementation and data (PDSA, Excel tracking form, etc.)?

We will use the doodle poll, excel spreadsheet, survey, PDSA, Qualtrics survey, and check-off sheets.

Why did you select this tool or method? Succinctly and thoroughly tell faculty why this seemed like the optimal tool/method.

The doodle poll allows the participants to conveniently schedule themselves for the skills check-off after watching the narrated PowerPoint slides. The project team will then send them an invite for the skills check-off. The doodle poll allows the Strike Team to schedule themselves at their convenience. The PowerPoint presentation offers CDC recommended steps for proper donning and doffing of PPE. It provides a quick refreshment and emphasis of the technique as it allows the participant to watch it several times and even practice along with it. The skills check-off

enables the project team to ensure mastery of the knowledge and giving immediate feedback as needed.

What is the implementation methodology or change theory that you are using to guide you through the implementation phase of the project?

We are using the PDSA, which allows us to adjust as the project continues.

Why did you select this tracking tool/method? Succinctly and thoroughly tell faculty why this seemed like the optimal tool/method.

The PDSA allows us to make changes and continuously analyze and adjust the implementation strategy. It also allows us to investigate the effectiveness of the change we introduced thoroughly. We are using an excel spreadsheet to track who has enrolled for the skills check-off and the project team member to check off the Strike Team member. It allows the project team to keep the updated records. It shows who passed or failed the check-off, who rescheduled, who enrolled, and who completed the skills check-off. It also supports a tally of the progress and those who completed the Qualtrics survey.

How will you communicate changes and project status to each member of your project team – academic and team members with the project site?

We meet virtually, use GroupMe, a text messaging app, and even via email. We also created a google doc where the team shares documents, including the enrollment.

Complete the following dates and map these on a timeline (Google "timeline" and construct your timeline using Word, Powerpoint, or Excel)

DNP I		**DNP II**		**DNP III**		**DNP IV**	
May 2020	*July 2020*	*August 2020*	*November 2020*	*January 2021*	*April 2021*	*May 2021*	*July 2021*
1. Problem identification 2. Literature review 3. Identification of need 4. Project meeting with faculty 5. Identifying project partner 6. Creation of project		1. One-pager summary of the prospective project 2. Initial Qualtrics self-certification tool and IRB 3. Site champion resume 4. Project Letter of Support 5. Project contract 6. Evaluating the project feasibility and adjustment		1. Onboard the strike teams through the DHHS 2. Project Team meeting with faulty 3. Start actual implementation 4. Send the PowerPoint, doodle poll to strike teams 5. Evaluating the implementation process		1. Evaluating outcome measures 2. Analyzing the project data scores 3. Evaluate the impact of the project on the participants 4. Evaluating the effect of the project on the problem 5. Poster preparation for dissemination 6. Publication of findings	

Date Implementation began or will begin: January 2021.

Date (after 1/19/2021) for meeting with site champion to discuss your chosen tools and timeline. January 26, 2021

Discuss your plan(s) for meeting with the site champion (frequency, specific dates, phone vs. face-to-face, etc). ***Be as specific as possible.***

We will be meeting with the Site Champion weekly or at least every two weeks. We will meet virtually with the Site Champion. The Site Champion will obtain permission to attend the weekly virtual meeting at the project site for updates. After or before the meeting, we hope to meet for clarifications.

I have met with and discussed my tools and implementation plan with my site champion. We are in agreement to the tools, processes, and timeline.

Student Signature: Roselyne Onkundi **Date:** 02/05/2021

Site: North Carolina Department of Health and Human Services

Site Champion Signature _____ Date _____

Appendix F

FORM 8274.B

Project Management Report

Please submit this worksheet for Project Management Report & Tools assignments #1 & #2

Name Roselyne Onkundi

Were you able to collect the data you thought you'd collect? ✓Yes No

If no, why not?

_____

Did you meet with your site champion on the date(s) you had planned to meet? ✓ Yes No

If not, why not?

_____

Succinctly identify & discuss barriers to your implementation.

The greatest barrier was the approval of the COVID-19 vaccines right at the start of our implementation process. We had to stop the implementation prematurely because the project partner switched their focus from COVID-19 testing to Covid-19 vaccination. We had a very low registration rate due to scheduling issues. Some Strike Team members enrolled for the implementation but did not show up. We, therefore, had some no-shows.

Did you update/revise your tools (PDSA, data collection tools, etc.)? Yes ✓ No

If No, why not? Because the project ended there was no need to revise the tool anymore.

What date(s) were you at your project site during this implementation interval (face-to-face or virtually)?

Our project team met virtually on two Wednesdays, although the students could just listen in but not participate in the discussions. The issues that were being discussed were not related to the project.

Succinctly identify 1-3 things you've learned during this implementation interval.

From this project, I have learned that the project implementation does not always go as originally planned but will always need adjusting as the process goes on. This applies to the implementation tool, which may need revising as the implementation goes on. The most significant lesson I have learned is that the completion of the project is determined by the project partner's goal and need, and, therefore, completion of the project is not guaranteed. If the project partner's need changes, then the project ends.

Statement of Collaboration

We have collaborated on the revision of the Operational Tool, Tracking Tool and agree that this project is on target with the timeline. As needed, provide additional comments on the following page.

Student Signature: Roselyne Onkundi Onkundi **Date:** April 1, 2021

Site Champion Signature _____ Date _____

Comments

Please share addition thoughts/notes on progress, barriers, concerns, etc.

My thoughts are: The project ended suddenly, and I feel like we did not achieve the project goal.

Appendix G

FORM 8274.C

Project Post-Implementation Report

Proposed Project

At the beginning of the project, the aim was to improve staff knowledge and application of COVID-19 transmission prevention skills to reduce viral transmission across North Carolina Long-Term Care(LTC) facilities. The project team hoped that the project would increase staff retention by empowering them through improved knowledge and application. The project would use the CDC-developed educational modules to emphasize donning and doffing of personal protective equipment (PPE). The ECU DNP student team was to assist the project partner in providing the education and performing post-education assessments through return demonstrations.

The project partner enrolled the strike team members as a supplemental workforce to alleviate the severe nursing home staffing shortage. Through the project champion, the project partner would provide the enrollees with the educational material and a doodle poll link for the Strike Team to enroll for the skills check-off. After the demonstration and the skills check-off, the Strike Team members would then take an anonymous post-implementation Qualtrics survey. The responses to the survey were the data the team was hoping to collect.

The Challenges

Initially, the project partner planned to enroll about 2,400 Strike Team members. The project team hoped to implement the exact number, but the enrollment was very low. Only ten Strike Team members participated in the project. Some Strike Team members enrolled for the skills check-off but did not show up for their appointed check-off. The project team members

tried to reach out to the Strike Team members who registered but with no success. Some members could not watch the implementation PowerPoint videos, while others could not enroll with the doodle poll. The team addressed the PowerPoint problem and sent it out with an explanation on how to play them.

The biggest challenge came within the first weeks of implementation. The project partner shifted the priority from educating Strike Team members on infection prevention to immunizations when the FDA approved the first COVID-19 vaccination. The project partner also took a long time to communicate their focus, and the team had to wait to hear from the project partner through the project champion. The emphasis on mass vaccinations was the main barrier, and the shift meant a halt to the project.

Before the project stopped, the team met with the project champion about four times (including the meetings from the previous semester), but after the halt, the group met with the project champion twice. The team met virtually attended a meeting at the project site twice. The panel discussed deploying the strike teams to the LTC facilities and managing compensation for their work. During those meetings, the project partner and the ECU team did not discuss the project.

Recommendations

The project was to benefit the LTC facility personnel and residents. Although the project stopped prematurely, there is a need to ensure that the problem does not recur. Xu et al. (2020) point out that although there are policies in place for LTC facilities violations, the availability of high-quality direct staff is critical. Cerullo (2021), in a news release, asserted that the shortages

might persist because the LTC facility work is taxing and low-paying. Therefore, the project partner may need to continue the project and establish a solution to the staffing shortage.

Appendix H

DNP Essentials Mapping

	Description	Demonstration of Knowledge
Essential I ***Scientific Underpinning for Practice***	**Competency** – Analyzes and uses the information to develop practice **Competency** -Integrates knowledge from humanities and science into the context of nursing **Competency** -Translates research to improve practice **Competency** -Integrates research, theory, and practice to develop new approaches toward improved practice and outcomes	• Conducted literature search about COVID-19 and its impact on LTCF at the beginning of the pandemic • Completed literature search on Strike Team members and its function concerning the mitigating spread of COVID-19 • Reviewed available literature on improvements with COVID-19 mitigation efforts post-project implementation, including vaccination development and distribution
Essential II ***Organizational & Systems Leadership for Quality Improvement & Systems Thinking***	**Competency** –Develops and evaluates practice based on science and integrates policy and humanities **Competency** –Assumes and ensures accountability for quality care and patient safety **Competency** -Demonstrates critical and reflective thinking **Competency** -Advocates for improved quality, access, and cost of health care; monitors costs and budgets **Competency** -Develops and implements innovations incorporating principles of change **Competency** - Effectively communicates practice knowledge in writing and orally to improve quality **Competency** - Develops and evaluates strategies to manage ethical dilemmas in patient care and within health care delivery systems	• Researched on COVID-19 infection rates and mortality in LTCF pre-implementation • Created project implementation tools (PowerPoint presentation, doodle pool, return demonstration skills check-off). • Developed Qualtrics survey for feedback and to evaluate the efficacy of project in improving Strike Team confidence in PPE use and infection control
		• Conducted a literature review on the efficacy of return demonstration

Essential III ***Clinical Scholarship & Analytical Methods for Evidence-Based Practice***	**Competency** - Critically analyzes literature to determine best practices **Competency** - Implements evaluation processes to measure process and patient outcomes **Competency** - Designs and implements quality improvement strategies to promote safety, efficiency, and equitable quality care for patients **Competency** - Applies knowledge to develop practice guidelines **Competency** - Uses informatics to identify, analyze, and predict best practice and patient outcomes **Competency** - Collaborate in research and disseminate findings	• Use of information technology such as GroupMe app, email, and text/call to communicate with DNP • project team to communicate research findings • Along with the DNP Project Student Team, developed an education video for Strike Team members to use in their infection control training • Submission of training video to project partner, who disseminated the information to the Strike Team members • Development of Qualtrics survey to gauge efficacy of project
Essential IV ***Information Systems – Technology & Patient Care Technology for the Improvement & Transformation of Health Care***	**Competency** - Design/select and utilize software to analyze practice and consumer information systems that can improve the delivery & quality of care **Competency** - Analyze and operationalize patient care technologies **Competency** - Evaluate technology regarding ethics, efficiency and accuracy **Competency** - Evaluates systems of care using health information technologies	• Created Qualtrics survey for Strike Team members to complete, provided certificate of completion to Strike Team members after completion of return demonstration sessions and Qualtrics survey • Use of PowerPoint program to create education video for project partner • Use of GroupMe, Microsoft Outlook email, WebEx, Doodle Poll, phone call, and text messaging to communicate with DNP Project Student Team, DNP faculty, project liaison, project partner, and Strike Team members
	Description	**Demonstration of Knowledge**

Essential V ***Health Care Policy of Advocacy in Health Care***	**Competency**- Analyzes health policy from the perspective of patients, nursing, and other stakeholders **Competency** – Provides leadership in developing and implementing health policy **Competency** –Influences policymakers, formally and informally, in local and global settings **Competency** – Educates stakeholders regarding policy **Competency** – Advocates for nursing within the policy arena **Competency**- Participates in policy agendas that assist with finance, regulation, and health care delivery **Competency** – Advocates for equitable and ethical health care	• Completed CITI module 2; applied for IRB approval before project implementation; determined that IRB approval was not necessary for the completion of this project • Reviewed current state mandates regarding COVID-19 mitigation efforts. • Considered government and CDC recommendations in dissemination plan; concluded that dissemination of information with Strike Team members would be 100% virtual due to COVID-19 restrictions • Incorporated current state guidelines and recommendations in the educational video so this information can be disseminated to Strike Team members and LTCF staff
Essential VI ***Interprofessional Collaboration for Improving Patient & Population Health Outcomes***	**Competency**- Uses effective collaboration and communication to develop and implement the practice, policy, standards of care, and scholarship **Competency** – Provide leadership to interprofessional care teams **Competency** – Consult intraprofessionally and interprofessionally to develop systems of care in complex settings	• Collaborated with project partner, DNP faculty, and DNP Project Student Team to create an educational video for Strike Team members, establish and complete return demonstration sessions, collect data using Qualtrics survey, and interpret findings • Part of the leadership team in my area of practice • Used GroupMe, WebEx, email, phone calls, and text messaging to communicate with DNP Project Team.
Essential VII ***Clinical Prevention & Population***	**Competency**- Integrates epidemiology, biostatistics, and data to facilitate individual and population health care delivery	• Participated in creating implementation tool(NarratedPowerPoint slide)

Health for Improving the Nation's Health	**Competency** – Synthesizes information & cultural competency to develop & use health promotion/disease prevention strategies to address gaps in care **Competency** – Evaluates and implements change strategies of models of health care delivery to improve quality and address diversity	• Created DNP Poster for dissemination of project findings • Presentation of DNP Poster in DNP Poster Presentation day.
Essential VIII ***Advanced Nursing Practice***	**Competency**- Melds diversity & cultural sensitivity to conduct systematic assessment of health parameters in varied settings **Competency** – Design, implement & evaluate nursing interventions to promote quality **Competency** – Develop & maintain patient relationships **Competency** –Demonstrate advanced clinical judgment and systematic thoughts to improve patient outcomes **Competency** – Mentor and support fellow nurses **Competency**- Provide support for individuals and systems experiencing change and transitions **Competency** –Use systems analysis to evaluate practice efficiency, care delivery, fiscal responsibility, ethical responsibility, and quality outcomes measures	• Collaborated with the team of five DNP students of varying cohorts and two DNP faculty Holding bi-weekly meetings Work in a multidisciplinary setting where I guide and support nursing staff and keep patient relationships • Worked with a multiracial/multiethnic group who made the DNP project team • Developed cost-benefit analysis of project to demonstrate financial significance of project • Review of peers' papers, DNP posters, and poster presentations and provided feedback for improvement

Appendix I

DNP Project PowerPoint Presentation Poster

ECU COLLEGE OF NURSING

Improving Staff Proficiency in Personal Protective Equipment Use for COVID -19 Transmission Prevention in Long-term Care Facilities in North Carolina

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Background

- Forty percent of all COVID cases were LTC residents accounting for 34 % of all deaths in the US
- Ineffective infection prevention and surveillance strategies leading to a broken system

Problem

- Highly contagious respiratory infection
- Majority of deaths in LTC facilities
- High staff turnover and understaffing for fear of contracting the infection

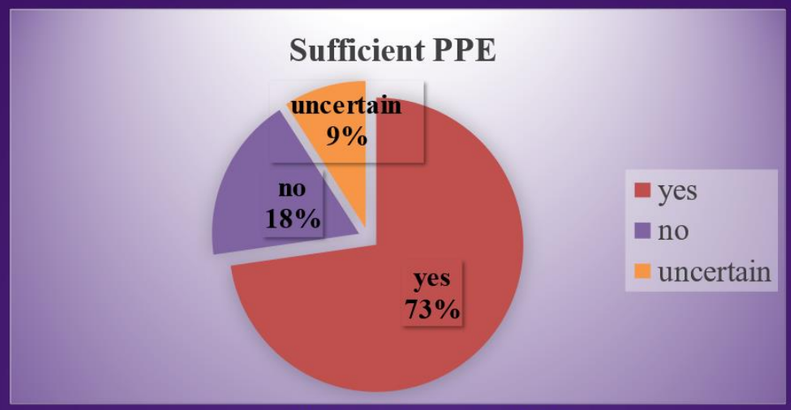
Purpose

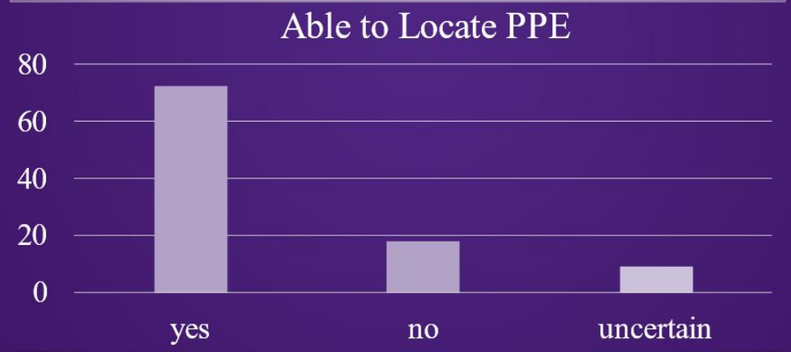
- Partner with NCDHHS
- Formulate a strategy to curb COVID-19 spread and mortality in NC LTC facilities
- Increase LTC facility personnel knowledge of donning and doffing PPE
- Indirectly increase LTC facilities staff retention.

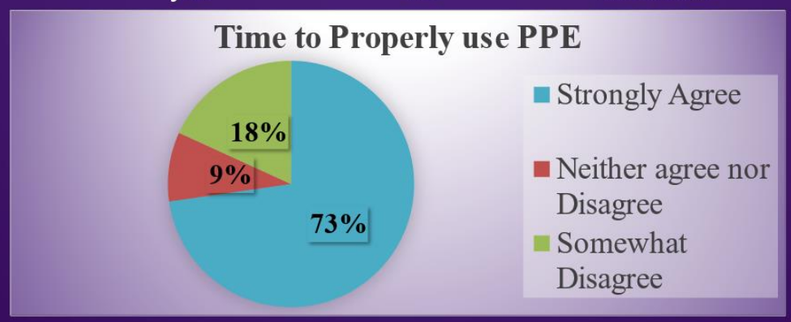
Methodology

- Enrolling strike teams through Doodle poll
- Virtual Training using PowerPoint presentation
- Virtual Skills check -off via WebEx
- Qualtrics Survey

Results







Barriers/Limitations

- Vaccine approval changed the priority of project partner
- Low strike team enrollment in project
- Project partner engaged the same participants in paid assignments
- Delayed communication between project team and project partner.
- The strike team did not train the LTC facility staff

Implications

- Reduced hospitalizations and hospital stays
- Improved morbidity and mortality
- Drive down healthcare costs
- Reduce staffing shortages
- Save on healthcare costs
- Improve productivity
- Reduce absenteeism

Recommendations

- Determine the cause of staffing shortages in LTC facilities
- Rampart spread of infections in LTC facilities
- Barriers to infection control in LTC facilities.
- Need to emphasize infection control policies
- Need to eliminate variations in doffing procedure

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